

<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371</b>		ATTORNEY'S DOCKET NUMBER 04661/HG
		U.S. APPLICATION NO. 10/509,549 (see 37 CFR 1.5)
INTERNATIONAL APPLICATION NO. PCT/JP03/03928	INTERNATIONAL FILING DATE 28 March 2003	PRIORITY DATE CLAIMED 29 March 2002
TITLE OF INVENTION <b>κ opioid Receptor Agonist Comprising 2-Phenylbenzothiazoline Derivative</b>		

APPLICANT(S) FOR DO/EO/US **Maki TOKAI; Takahiro HONDA; Masashi NIWA; Yaeko OSUMI; Ken-ichi FUJIMURA; Shin-ichi KOHNO**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☐ This is a FIRST submission of items concerning a submission under 35 U.S.C. 371.
2. ☒ This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☐ The US has been elected (Article 31).
5. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ has been communicated by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
  - a. ☐ is attached hereto.
  - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ have been communicated by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

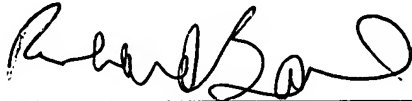
11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A preliminary amendment.
14. ☐ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821- 1.825.
18. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☐ Other items or information:

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Date of Deposit: December 17, 2004

I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above with sufficient postage, and is addressed to the Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450

*Dorothy DeFrancesco*  
Dorothy DeFrancesco

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) <b>10/509,549</b>		INTERNATIONAL APPLICATION NO. <b>PCT/JP03/03928</b>		ATTORNEY'S DOCKET NUMBER <b>0466-1180</b>	
21. The following fees are submitted: <input type="checkbox"/> a) Basic national fee..... <b>\$300.00</b> <input type="checkbox"/> b) Examination fee..... <b>\$200.00</b> <input type="checkbox"/> c) Search fee..... <b>\$500.00</b> <b>TOTAL OF ABOVE CALCULATIONS = \$1000.00</b>				\$	<b>1000.00</b>
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.					
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Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	.00
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Independent claims	- 3 =	0	x \$200.00	\$	.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$360.00	\$	.00
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$	.00
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$	.00
<b>SUBTOTAL =</b>				\$	.00
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Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	.00
<b>TOTAL FEES ENCLOSED =</b>				\$	.00
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a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <b>06-1378</b> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.					
<b>NOTE:</b> Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.					
SEND ALL CORRESPONDENCE TO: <b>CUSTOMER NO. 01933</b>  <b>Frishauf, Holtz, Goodman &amp; Chick P.C.</b> <b>767 Third Avenue</b> <b>25<sup>th</sup> Floor</b> <b>New York NY 10017-2023</b>					
				 SIGNATURE <b>Richard S. Barth</b> NAME <b>28,180</b> REGISTRATION NUMBER	

**IN THE UNITED STATES PATENT  
AND TRADEMARK OFFICE**

Serial No. : 10/509,549  
Applicants : Maki TOKAI et al.  
Filed : September 28, 2004  
For :  $\kappa$  OPIOID RECEPTOR AGONIST  
COMPRISING 2-PHENYLBENZO-  
THIAZOLINE DERIVATIVE  
Docket No. : 04661/HG  
Customer No.: 01933

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Date of Deposit: December 17, 2004


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Alexandria, VA 22313-1450

  
Dorothy DeFrancesco

In the event that this Paper is late filed, and the necessary petition for extension of time is not filed concurrently herewith, please consider this as a Petition for the requisite extension of time, and to the extent not tendered by check attached hereto, authorization to charge the extension fee, or any other fee required in connection with this Paper to Account No. 06-1378.

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**MAIL STOP PCT**

S I R :

This application is a United States national phase application of International application PCT/JP03/03928.

Enclosed is a copy of the International Search Report (Form PCT/ISA/210) (2 sheets) and copies of the publications cited therein, except for the cited U.S. patents. Also enclosed are copies of the publications referred to on pages 1 to 3 of the present specification.

Further enclosed are a Form PTO/SB/08A and a Form PTO/SB/08B.

It is respectfully requested that the Examiner return initialed copies of the attached Forms PTO/SB/08A and PTO/SB/08B to confirm that the publications listed thereon have been considered and made of record.

Respectfully submitted,



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- Encs.: (1) copy of International Search Report for  
PCT/JP03/03928 (Form PCT/ISA/210) (2 sheets)
- (2) Forms PTO/SB/08A and PTO/SB/08B and copies of  
publications listed thereon, except for the U.S.  
patents

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for Form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/549
				Filed	September 28, 2004
				First Named Inventor	Maki TOKAI
				Group Art Unit	
				Examiner Name	
Sheet	1	of	2	Attorney Docket Number	04661/HG

## U.S. PATENT DOCUMENTS

Exam. Inits <sup>*</sup>	Cite No <sup>1</sup>	Document Number	Kind Code <sup>2</sup>	Name of Patentee or Applicant	Publication Date MM-DD-YYYY	Relevant Portion
		4,479,949		IWAO et al.	10-30-1984	
		4,547,513		IWAO et al.	10-15-1985	
		6,174,891	B1	NAGASE et al.	01-16-2001	

## FOREIGN PATENT DOCUMENTS

Exam. Inits <sup>*</sup>	Cite No <sup>1</sup>	Off c <sup>3</sup>	Document Number <sup>4</sup>	Kind Code <sup>5</sup>	Name of Patentee or Applicant	Publication Date MM-DD-YYYY	Relevant Portion	T <sup>6</sup>
		JP	58-46079	A	SANTEN PHARMACEUTICAL CO.	03-17-1983		*
		JP	60-139679	A	SANTEN PHARMACEUTICAL CO.	07-24-1985		**
		JP	59-67276	A	SANTEN PHARMACEUTICAL CO.	04-16-1984		***
		JP	61-83175	A	SANTEN PHARMACEUTICAL CO.	04-26-1986		***
		JP	62-221679	A	SANTEN PHARMACEUTICAL CO.	09-29-1987		***
		JP	62-221680	A	SANTEN PHARMACEUTICAL CO.	09-29-1987		***
		JP	8-231399	A	SHIONOGI & CO. LTD	09-10-1996		****
		WO	98/23290	A1	TORAY INDUSTRIES	06-04-1998		*****

Examiner Signature	Date Considered
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\* EXAMINER: Initial if document considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Place a check here if English translation is attached.

DATE MAILED: December 17, 2004 \*RELATED FAMILY MEMBER OF USP 4,479,949; \*\*RELATED FAMILY MEMBER OF USP 4,547,513; \*\*\*ENGLISH-LANGUAGE ABSTRACT ENCLOSED; \*\*\*\*ENGLISH-LANGUAGE COMPUTER TRANSLATION ENCLOSED; \*\*\*\*\*RELATED FAMILY MEMBER OF USP 6,174,891

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PTO/SB/08B (08-00)

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for Form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/509,549
				Filing Date	September 28, 2004
				First Named Inventor	Maki TOKAI
				Group Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	04661/HG
<b>OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of author (in CAPITAL LETTERS), title of article, title of item, date, page(s), volume-issue number(s), publisher, city and/or country where published			T <sup>2</sup>
		YAMAMOTO, K. et al., "Novel Calcium Antagonists, Synthesis and Structure-Activity Relationship Studies of Benzothiazoline Derivatives"; <u>J. Med. Chem.</u> , (1988), 31, 919- 930.  FUJITA, M. et al., "Synthesis and Calcium Antagonist Activity of (+)-(R)- and (-)(S)-3- Acetyl-2-[5-methoxy-2-[4-(N-methyl-N-(3,4,5-trimethoxyphenethyl)amino]butoxy]- phenyl]benzothiazoline Hydrochloride", <u>Chem. Pharm. Bull.</u> , (1990), 38(4), 936-941.  WAY, E.L., "Review of Revues", <u>Annu. Rev. Pharmacol. Toxicol.</u> , (1992), 32, 9-23.  "Experimental Medicine", 18 (17), 2332-2337 (2000).			★
		SATOH, Masamichi, "Molecular Neuropharmacology of Nociceptive Transmission and Opioid Receptors", <u>J. Pharm. Soc.</u> , 120 (12), 1291-1307, (2000).  "All of Opinoid", published by Mikusu Co., Ltd., pp. 222-229, (1999).			★
		"All of Opinoid", published by Mikusu Co., Ltd., pp. 25-36, (1999).			★
Examiner Signature				Date Considered	

\* EXAMINER: Initial if document considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Place a check here if English translation is attached.

DATE MAILED: December 17, 2004

\*ENGLISH-LANGUAGE ABSTRACT ENCLOSED.